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ABSTRACT

Research on service learning spanning the last three decades has revealed that service learning facilitates the development of leadership skills, self esteem, teamwork, communication skills, and acceptance of cultural diversity. Perhaps the most difficult arena has been the area of intellectual, cognitive, and academic efforts. A study investigated content knowledge gains by integrating service learning in an undergraduate educational psychology course when the course and the instructor were held constant. The study was designed to reinforce concepts and theories taught in the classroom with more tangible hands-on experiences at the site. Participants were 64 State University of New York at Oneonta undergraduates. A two sample t-test was performed on the total scores earned on the quizzes, examinations, and written assignments. The results were significant at the .05 probability level with a p-value of .013. Service learning, rather than limiting learning experiences to vicarious exposure to critical issues and problems, engages students with the phenomenon under study. T-test data is appended. Contains 23 references. (Author/BT)

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Investigating Content Knowledge Gains In Academic Service-Learning: A Quasi-Experimental Study In An Educational Psychology Course

By

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Abstract

Research on service learning spanning the last three decades has revealed that service learning facilitates the development of leadership skills, self-esteem, team work, communication skills, and acceptance of cultural diversity. Perhaps the most difficult arena has been in the area of intellectual, cognitive, and academic effects. The purpose of this study was to investigate content knowledge gains by integrating service-learning in an undergraduate Educational Psychology course when the course and the instructor were held constant. A two sample t-test was performed on the total scores earned on the quizzes, exams, and written assignments. The results were significant at the .05 probability level with a p-value of .013.

Introduction

Academic service learning is a pedagogical model that intentionally integrates academic learning and relevant community service (Howard, 1998). Connecting service directly with academic courses makes it quite different from "volunteer" work that is performed in the community. Properly designed service learning courses relate the community service experience to the course material and require that students reflect on their experiences through writings, discussions, or class presentations (Sax and Astin, 1997). A service learning program integrates service into courses in such a way that service enhances learning and learning enhances service (Furco, 1996). Advocates of service learning argue that community service experiences enhance teaching and learning in all subject areas (Battistoni, 1997; Sax and Astin, 1997).

Theoretical Framework

Research on service learning spanning the last three decades has revealed that service learning facilitates the development of leadership skills, self-esteem, team work, communication skills, and acceptance of cultural diversity (Brandell & Hinck, 1997; Shumer & Belbas, 1996; Wade, 1997). Perhaps the most difficult arena has been in the area of intellectual, cognitive, and academic effects (Alt, 1997; Kraft, 1996).

Most studies of subject matter learning have used student self-reports of "how much is learned" rather than independent measures of outcomes for specific classes (Cohen & Kinsey, 1994; Eyler & Giles, 1996; Gray and others, 1996). One experimental study by Markus, Howard & King, (1993) of students in a large political science course revealed that students in service-learning sections of the course were significantly more likely than those in the traditional discussion sections to report that they had performed up to their potential in the course, had learned to apply principles from the course to new situations, and had developed a greater

awareness of societal problems. Classroom learning and course grades also improved significantly as a result of students' participation in course-relevant community service. Another study by Kendrick (1996) explored the effects of service-learning on students in an Introduction to Sociology course. It compared learning outcomes of students in two courses, one traditionally-taught and one with service-learning. Students in the service-learning course were found to show greater improvements in measures of social responsibility and personal efficacy, and they showed evidence of greater ability to apply course concepts to new situations. Faculty and administrators are intensely interested in this issue, but convincing evidence of the importance of service learning to s ubject matter learning is still lacking (Giles & Eyler, 1998). The purpose of the present study was to investigate content knowledge gains by integrating service-learning in an undergraduate Educational Psychology course when the course and the instructor were held constant.

Method

Participants

Participants in the study were 64 SUNY Oneonta undergraduates, predominantly sophomores and juniors, enrolled in "Psychological Foundations of Education" at the SUNY College at Oneonta in the Fall 1997 semester. Participants included 11 males (17.8%) and 53 females (82.8%).

Measures

Effects of the service-learning experience was assessed in a variety of ways. These would be described under three major categories.

1. Academic Outcomes. These included scores on periodic quizzes and trimester exams, and written assignments. The former were criterion-referenced tests that focused on understanding and applications of the theories of development, learning and motivation. The multiple-choice

format was used and items pertaining to the knowledge, comprehension, and application levels of the Bloom's taxonomy of cognitive domain (Bloom, Engelhart, Frost, Hill & Krathwohl, 1956) were constructed. The latter were scores on review papers for the control group and scores on the journal and reflective papers for the service-learning group.

2. Student Perception of Instruction Outcomes: These were gathered at the end of the semester by a standard evaluation questionnaire developed by the college. This questionnaire provided data on twenty-one variables ranging from demographic data to various aspects of course evaluation. The latter were rated with 5-point Likert-type response options. Additionally, there was a sheet provided for written comments. The Student Perception of Instruction questionnaires were anonymous, identifying students only as being in either control or service-learning group.

3. Service Outcomes: The impact of the service provided by the students on the agencies was assessed on five dimensions. A four-point Likert type scale was used with 1 being "rarely" and 4 being "always". The dimensions were as follows:

a. the student is punctual

b. the student is considerate and polite

c. the student performs the expected tasks

e. the student is reliable, consistent, and accomplishes assigned tasks

e. the importance of student's contribution to the agency

Procedures

"Psychological Foundations of Education" is offered in a lecture/discussion format. This course is a required course for all education majors and studies the relationship of research to educational decision making and instruction. Included in this course are behavioral, cognitive, motivational and conceptual change principles and practices derived from research and applied to educational

decision making and instruction. All outcomes are also applied to helping students become self-regulated learners, and effective (K-12) professional education leaders. Both the sections met twice weekly in their groups in 75-minute lecture sessions.

Prior to class registration for the Fall semester, one section was randomly designated as the "Service-Learning" section and the other served as a "Control" section. A total of 31 students had enrolled in the service-learning section and 33 students in the control section. Both the sections were taught by the same instructor using the traditional expository method combined with class discussions, group activities and video presentations. All students were required to do written assignments and to take periodic quizzes and trimester exams. The only difference was the requirements for the written assignments. The service-learning section was required to do a service-learning project. During the first two weeks of the semester the College's Center for Social Responsibility and Community assisted in placing students in different sites locally that dealt with children from K-12. They were in-service for a minimum of twenty hours engaging in such activities as assisting in after-school programs, youth soccer programs, and serving as reading buddies. Additionally, sample reflection opportunities included maintaining a triple-entry reflective journal and turning in a final reflective paper. Rating scales were generated to assess the impact of the service provided by the students on the agencies. The control section was required to write three 7 - 10 page papers by reviewing recent research in the areas of development, learning, and motivation. This library research project was intended to take an amount of time and effort equivalent to that expended by students in the service-learning section.

Results

1. Academic Outcomes. A t-test for independent samples was conducted on the following components:

a. Total scores earned on the quizzes, exams, and written assignments: Since the variances of the two groups were the same, a pooled t-test was used. The results were significant at the .05 probability level with a p-value of .013. Thus there was a significant difference between the two groups. (Appendix 1)

b. Scores earned on quizzes and exams: The service-learning group did slightly better than the control group. However, this difference was not significant (Appendix 2).

c. Scores earned on assignments: A significant difference was found over here with the service-learning group scoring thirteen points higher than the control group (Appendix 3)

2. Student Perception of Instruction Outcomes: A significant difference was found only on two of the 21 variables. These were as follows:

a. Perception of workload required by the instructor: In the control group 22% perceived it as excessively high and 52% as high, whereas in the service-learning group 38.5% perceived it as high and 61.5% it as average. Thus no one in the service-learning group perceived the workload as being excessively high.

b. Attendance: In the control group 96.3% reported that they had attended 90-100% of the time, whereas in the service-learning group 74% reported that they attended 90-100% of the time. (Perhaps this could be due to the fact that the service-learning group met during the lunch hour from 12:00 – 1:15!)

3. Service Outcomes: In terms of the impact of the service provided by the students on the agencies, the mean ratings ranged from 3.3 to 3.9. Thus students' contributions were perceived positively by seventy percent of the site supervisors.

Discussion

Guided by previous research, the present study sought to investigate content knowledge gains by integrating service-learning in an upper division Educational Psychology course. The study was designed to reinforce concepts and theories taught in the classroom with more tangible hands-on experiences at the site. A two-sample t-test on the total scores earned at the end of the semester revealed significant results at the .05 probability level with a p-value of .013.

From a pedagogical standpoint, service-learning is one form of experiential learning, in contrast to the "information-assimilation model" that typifies classroom instruction (Coleman, 1977; Dewey, 1938). Both methods have their advantages and disadvantages. The information-assimilation model emphasizes a "top-down" approach to learning, in which principles and facts are presented symbolically (e.g., through books, lectures, or videotapes), and specific applications of principles are learned primarily through deductive reasoning or "thought experiments" rather than through direct experience with real world situations. The advantages of the information-assimilation method are that it can transmit large volumes of information within a short time span and that it emphasizes logical, coherent cognitive organization of that information. The method's weakness is that students' actual acquisition and long-term retention of information are problematical.

Experiential learning is more of a "bottom-up" method, in which general lessons and principles are drawn inductively from direct personal experiences and observations. This approach is less efficient than readings and lectures in transmitting information, and general principles can be slow to emerge. On the other hand, experiential learning counters the abstractness of much classroom instruction and motivates lasting learning by providing concrete examples of facts and theories, thereby "providing connections between academic content and the problems of real life" (Conrad & Hedin, 1991, p.745).

Thus when community service is combined with classroom instruction, the pedagogical advantages of each compensates for the shortcomings of the other. Students' written comments on their course evaluation forms support these conclusions:

> I enjoyed the Service-Learning project. The hands-on experience was really beneficial.
>
> The Service-Learning project was a valuable experience. I think it should be continued, it makes things more interesting.
>
> I think the Service-Learning project is an excellent way for students to make meaningful applications and break out of the strictly lecture-centered mode.

On the other, when we look at scores earned on quizzes and exams separately from the written assignments we find that the service-learning group did slightly better than the control group. However, this difference was not significant. The absence of a statistically significant difference could interpreted in two ways. Firstly, it could imply that the multiple-choice format is insensitive to pick up any differences that might exist. Secondly, it could mean that the instruction in the control group was adequate to transfer on application-type questions. However, on the written assignments a significant difference was found with the service-learning group scoring thirteen points higher than the control group. A close analysis revealed that there were four (12%) students who turned in incomplete assignments. This could be explained by the fact that 74% of the control group perceived the work load as being excessively high or high. However, in the service-learning group although a majority of students had problems pertaining to transportation, completion of the twenty hours within the deadline, they reported as having enjoyed and looking forward to the interactions with the school children.

Significance

The findings of this study hold at least two implications for structuring service learning projects in Educational Psychology. First, it demonstrates that students do benefit more from

direct rather than indirect projects. Students who tutor, read or work with children are more likely to learn skills that can be applied to their future teaching. Second, it is possible that the opportunity to reflect on their service activities encourages the students to examine the connections between their service activities and the concepts and theories taught in the classroom. With respect to the community agencies, the service provided by the students who were knowledgeable about children particularly with respect to the theories of development, learning, and motivation was perceived positively. Service learning, rather than limiting learning experiences to vicarious exposure to critical issues and problems, engages students with the phenomenon under study. It is important that faculty members aid in the process of application, connection-building, and skill development by integrating service experiences into their courses (Nouri, Haskel, and Mietus, 1997; Williams, Youngflesh, and Bagg, 1997). When we capitalize on the opportunities for school and community linkages, we prepare our students to teach in the schools of the 21st century, influence the structure and the curriculum of those schools, and address unmet community social service needs (Anderson & Guest, 1994).

Appendix 1

Two Sample t-test for Service-Learning (S-L) vs Control groups on Total Scores

Group	N	Mean	SD	SE Mean
S-L	31	303.3	23.1	4.16
Control	33	286.1	29.8	5.19

t = 2.57 p = 0.013*

Appendix 2

Two Sample t-test for Service-Learning (S-L) vs Control groups on Quizzes and Exams

	N	Mean	SD	SE Mean
S-L	31	155.03	21.74	3.90
Control	33	151.12	19.25	3.35

t = .76 p = 0.448

Appendix 3

Two Sample t-test for Service-Learning (S-L) vs Control groups on Written Assignments

	N	Mean	SD	SE Mean
S-L	31	148.29	3.86	.694
Control	33	135.00	20.86	3.63

t = 3.49 p = 0.001*

References

Anderson, J. B & Guest, K. (1994). Service Learning in teacher education at Seattle University. In R. J. Kraft & M. Swadener (Eds.), Building community: Service learning in the academic disciplines (pp. 141-150). Colorado Campus Compact.

Alt, M. N. (1997). How effective an educational tool is student community service? NASSP Bulletin, 81, (591), 8 - 16.

Battistoni, R. M. (1997). Service Learning and Democratic Citizenship. Theory Into Practice, 36, (3), 150-156.

Bloom, B. S., Engelhart, M. D., Frost, E. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of educational objectives. Handbook I: Cognitive Domain. New York: David McKay.

Brandell, M. E. & Hinck, S. (1997). Service learning: Connecting citizenship with the classroom. NASSP Bulletin, 81, (591), 49 - 56.

Cohen, J. & Kinsey, D. (1994). 'Doing good' and scholarship: A service learning study. Journalism Educator, 48, (4), 4 - 14.

Coleman, J. S. (1977). Differences between experiential and classroom learning. In M. T. Keaton (Ed.), Experiential learning: Rationale, characteristics and assessment (pp. 49-61). San Francisco: Jossey-Bass.

Conrad, D., & Hedin, D. H. (1991). School-based community service: What we know from research and theory. Phi Delta Kappa, 72, 743-749.

Dewey, J. (1938). Experience and education. New York: Collier.

Eyler, J. & Giles, D. E., Jr. (1996). The impact of service learning program characteristics on student outcomes. Paper presented at National Society for Experiential Education conference, Snowbird, Utah.

Furco, A. (1996). Service-Learning: A balanced approach to experiential education. Expanding Boundaries: Serving and Learning, 1-6.

Giles, D. E. & Eyler, J. (1994). The theoretical roots of service-learning in John Dewey: Toward a theory of service-learning. Michigan Journal of Community Service Learning, 1, 77-85.

Giles, D. E. & Eyler, J. (1998). A service learning research agenda for the next five years. New Directions for Teaching and Learning, 73, 65 - 72.

Gray, M. J., Feschwind, S., Ondaatje, E. H., Robyn, A., Klein, S., Sax, L., Astin, A. W. & Astin, H. S. (1996). Evaluation of Learn and Serve America, Higher Education: First Year Report, 1. Santa Monica, Calif.: RAND Corporation.

Howard, J. P. F. (1998). Academic service learning: A counternormative pedagogy. New Directions for Teaching and Learning, 73, 21 - 29.

Kendrick, J. R., Jr., (1996). Outcomes of service learning in an introduction to sociology course. Michigan Journal of Community Service Learning, 3, 82 - 91.

Kraft, R. (1996). Service Learning: An Introduction to Its Theory, Practice, and Effects. Education and Urban Society, 28 (2), 131-159.

Markus, G., Howard, J., & King, D. (1993). Integrating community service and classroom instruction enhances learning: Results from an experiment. Educational Evaluation and Policy Analysis, 15 (4), 410-419.

Nouri, M., Haskel, A., Mietus, A. (1997). Allison and Amy: Two students' experiences in scholarship and civic responsibility. Expanding Boundaries: Building Civic Responsibility Within Higher Education, 65-69.

Sax, L. J.,& Astin, A. W. (1997). The benefits of service: Evidence from undergraduates. Educational Record, 78 (3-4), 25-32.

Shumer, R., & Belbas, B. (1996). What we know about service learning. In R. Kraft

(Ed.), Education and Urban Society, 28 (2), 208-223.

Wade, R. C. (1997). Empowerment in student teaching through community service learning. Theory Into Practice, 36, (3), 184-191.

Williams, D., Youngflesh, A., Bagg, B. (1997). Enhancing academic understanding through service-learning: Listening to students' voices. Expanding Boundaries : Building Civic Responsibility Within Higher Education. 74-79.